Mr

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,513	10/14/2004	Danielle Rossi	NL 02 0330 US	4327

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PHILIPS ELECTRONICS NORTH AMERICA CORPORATION
INTELLECTUAL PROPERTY & STANDARDS
1109 MCKAY DRIVE, M/S-41SJ
SAN JOSE, CA 95131

EXAMINER
RIZK, SAMIR WADIE

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/511,513	ROSSI ET AL.
	Examiner	Art Unit
	Sam Rizk	2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>*14 October 2004*</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-7* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-7* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *10/14/2007* is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☒ All   b) ☐ Some *   c) ☐ None of:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *10/14/2006*.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTIONS

- Claims 1-7 have been submitted for examination

- Claims 1-7 have been rejected

Abstract Objection

1.   The abstract of the disclosure should read on line 4:

"...the distances (l1,l2,l3) (d1,d2,d3) between...." per FIG 2.

Correction is required. See MPEP § 608.01(b).

Drawings

2.   Figure 1 should be designated by a legend such as --Prior Art-- because only

that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to

avoid abandonment of the application. The replacement sheet(s) should be

labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as

not to obstruct any portion of the drawing figures. If the changes are not accepted

by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not

be held in abeyance.

Claim Objections

3.   Claims 1 is objected to because of the following informalities:

Improper punctuations and indentation of each claim limitations.

This is a problem, that is, examiner doesn't know where the preamble and the limitation(s) body are? This will help the Examiner focus the search on every limitation in the claim.

In regard to claim 1;

- Data communication means for communicating N-bit data, N being an integer with a value of at least three, the data communication means having a plurality of substantially parallel conductors comprising a first, a second and a third conductor for respectively communicating a first, a second and a third bit of the N-bit data, the first conductor having a first distance to the second conductor, and the second conductor having a second distance to the third conductor, the first distance being smaller than the second distance; said first distance being based on a first correlation between the first bit and the second bit and said second distance being based on a second correlation between the second bit and the third bit, characterized in that the first bit is a bit of a data word and the second bit is an encoding bit of a fault-tolerant encoding method for the data word.

Examiner notes lack of punctuation and indentation of each distinct limitation in the claim.

Examiner assumes the limitations of this claim 1 are:

- a first, a second and a third conductor for respectively communicating a first, a second and a third bit of the N-bit data,

- the first conductor having a first distance to the second conductor, and

- the second conductor having a second distance to the third conductor, the first distance being smaller than the second distance;

- said first distance being based on a first correlation between the first bit and the second bit; and

- said second distance being based on a second correlation between the second bit and the third bit, characterized in that the first bit is a bit of a data word and the second bit is an encoding bit of a fault-tolerant encoding method for the data word.

Appropriate correction is required.

4.   Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for **failing to further limit the subject matter of a previous claim**. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

5.   Claim 4 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim to **any the preceding claims**. See MPEP § 608.01(n). Accordingly, the claim 4 has not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

6.   Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by

Henkel et al. US publication no. 2003/0201918 (Hereinafter Henkel)

7.   In regard to claim 1, Henkel teaches:

- Data communication means for communicating N-bit data, N being an

    integer with a value of at least three, the data communication means

    having a plurality of substantially parallel conductors comprising a first,

    a second and a third conductor for respectively communicating a first,

    a second and a third bit of the N-bit data, the first conductor having a

    first distance to the second conductor, and the second conductor

    having a second distance to the third conductor, the first distance

    being smaller than the second distance; said first distance being based

    on a first correlation between the first bit and the second bit and said

    second distance being based on a second correlation between the

    second bit and the third bit, characterized in that the first bit is a bit of a

data word and the second bit is an encoding bit of a fault-tolerant

encoding method for the data word.

(Note: FIGS. 7A-7C and Sections [0097], [0119] and [0135] in Henkel)

8.   In regard to claim 5, Henkel teaches:

- Method for designing data communication means for communicating

  N-bit data, N being an integer with a value of at least three, the data

  communication means having a plurality of substantially parallel

  conductors comprising a first, a second and a third conductor for

  respectively communicating a first, a second and a third bit of the N-bit

  data, the first conductor having a first distance to the second

  conductor, and the second conductor having a second distance to the

  third conductor, the first distance being smaller than the second

  distance; characterized in that the method comprises the steps of:

- calculating a first correlation between the first bit and the second bit;

- calculating a second correlation between the second bit and the third

  bit;

- determining the first distance based on the first correlation;

- determining the second distance based on the second correlation; and

- constructing a codebook of the N-bit data for calculating the first

  correlation and the second correlation.

(Note: Section [0142] in Henkel)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 2,3,6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Henkel as applied to claims 1 and 5 above, and further in view of Colon-

Bonet US publication no. 2004/0044716 (Hereinafter Bonet).

10.   In regard to claim 2, Henkel substantially teaches all the limitations in claim 1.

However, Henkel does not explicitly disclose:

- Data communication means as claimed in claim 1, characterized in

  that the fault-tolerant encoding method is dual-rail encoding.

Bonet, in an analogous art, that teaches a self-timed transmission system and

method efficiently communicate a plurality of data operands through common

digital device disclose:

- Data communication means as claimed in claim 1, characterized in

  that the fault-tolerant encoding method is dual-rail encoding.

(Note: Section [0066], lines (15-16) in Bonet)

Therefore, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to modify Henkel with the teaching of Bonet that

include dual-rail fault-tolerant encoding method.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized the need to exploit characteristics of the signal lines and the encoding schemes to be adapted.

11.   In regard to claim 3, Henkel teaches:

- Data communication means as claimed in claim 1 or 2, characterized in that the data communication means further comprise a fourth conductor for communicating a fourth bit of the N-bit data word, the fourth conductor having a third distance to the third conductor based on a third correlation between the third bit and the fourth bit.

(Note: FIGS (7A-7B) in Henkel)

12.   In regard to claim 6, Henkel teaches:

- A method as claimed in claim 5, characterized in that the first bit is a bit of a data word and the second bit is an encoding bit of a fault-tolerant encoding method for the data word.

(Note: Claim 1 in Bonet)

13.   In regard to claim 7, Henkel teaches:

- A method as claimed in claim 5 or 6, characterized by further comprising the step of changing an order of the first conductor, the second conductor and the third conductor to increase a sum of the first correlation and the second correlation.

(Note: FIGS (7A-7C) in Henkel)

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

- Davis et al. US publication no. 2003/0165158 teaches techniques for

  facilitating conversion between asynchronous and synchronous

  domains

- Ridgway US paten no. 6369614 teaches Asynchronous completion

  prediction

- Cummings et al. US publication no. 2004/0151209 teaches

  Asynchronous system on a chip interconnect

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sam Rizk whose telephone number is (571) 272-

8191. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone

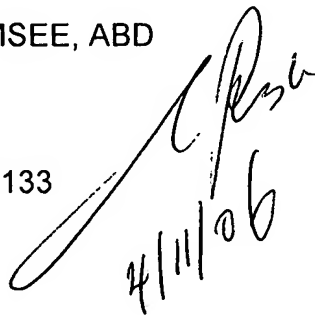number for the organization where this application or proceeding is assigned is

(703) 872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

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Should you have questions on access to the Private PAIR system, contact the

Electronics Business Center (EBC) at 866-217-9197 (toll-free)

Sam Rizk, MSEE, ABD

Examiner

ART UNIT 2133

GUY LAMARRE
PRIMARY EXAMINER